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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

Application Number: 10/017157  
Filing Date: 12/14/2001  
Appellant(s): Knuppel et al.

\_\_\_\_\_  
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For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed on 09/29/2008.

(1) *Real Party in Interest*

A statement identifying the real party in interest is contained in the brief.

(2) *Related Appeals and Interferences*

A statement identifying the related appeals and interferences which will directly affect or be directly affected by or have a bearing on the decision in the pending appeal is contained in the brief.

(3) *Status of Claims*

The statement of the status of the claims contained in the brief is correct.

(4) *Status of Amendments*

The appellant's statement of the status of amendments contained in the brief is correct.

(5) *Summary of claimed subject matter*

The summary of claimed subject matter contained in the brief is correct.

(6) *Grounds of Rejection to be Reviewed on Appeal*

The appellant's statement of the issues in the brief is correct.

Grounds of Rejection to be Reviewed on Appeal:

1. The rejection of claims 64-75, 78, 87-92, 99-104 under 35 U.S.C. 103(a) as being unpatentable over Kantner et al. (US 6,433,073), in view of Kim et al. (6,372,876), and further in view of the Handbook of Cosmetic Science and Technology.

2. The rejection of claims 77, 79-86, 94-98, 105-109 under 35 U.S.C. 103(a) as being unpatentable over Kantner et al., in view of Kim et al., and the Handbook of Cosmetic Science and Technology as applied to claims 64-75, 78, 87-92, 99-104 above, and further in view of Koch et al (6,258,963).

3. The rejection of claims 76, 93 under 35 U.S.C. 103(a) as being unpatentable over Kantner et al., in view of Kim et al., and the Handbook of Cosmetic Science and Technology as applied to claims 64-75, 78, 87-92, 99-104 above, and further in view of Gers-Barlag et al. (5,725,844).

*(7) Claims Appendix*

The copy of the appealed claims contained in the Appendix to the brief is correct.

*(8) Evidence Relied upon*

US 6,433,073	Kantner et al.	2002
US 6,372,876	Kim et al.	2002
Handbook of Cosmetic Science and Technology.		1993
US 6,258,963	Koch et al.	2001
US 5,725,844	Gers-Barlag et al.	1998

*(9) Grounds of Rejection*

The following ground(s) of rejection are applicable to the appealed claims:

*Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 64-75, 78, 87-92, 99-104 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kantner et al. (US 6,433,073, PTO-892 of record), in view of Kim et al. (6,372,876, PTO-892 of record), and further in view of the Handbook of Cosmetic Science and Technology.

Kantner et al. disclose oil-in-water cosmetic compositions comprising film forming polyurethane which encompass and/or read on instant polyurethanes. It is disclosed that the oil-in-water composition comprising water soluble or water-dispersable polyurethane therein have properties such as water resistance, transfer resistance. See abstract; column 5, lines 28-35; column 32, claims 23, 24. The polyurethanes therein are cationic, anionic, or zwitterionic polyurethanes. See column 8, line 56-column 10, line 7; see Example 16 for anionic polyurethane. It is also taught that the compositions therein for outdoor application can contain photostabilizers, for example Tinuvin 292, Tinuvin 400 etc. See column 15, lines 5-9. A body lotion oil-in-water emulsion for use as waterproof sunscreen comprising 2.4 weight percent of polyurethane, and an oil-in-water emulsion useful as water-resistant mascara comprising 6.0 weight % of polyurethane are disclosed. See column 27, TABLE XVI, TABLE XVII.

Kantner et al. does not explicitly teach the employment of polyurethanes with a K value of between 25 to 100, in the waterproof O/W compositions therein.

Kantner et al. does not explicitly teach the employment of polyurethanes with a glass transition temperature of at least 15 °C, of at least 25 °C.

Kantner et al. does not explicitly teach microemulsions.

Kim et al. teach the use of polyurethanes which are soluble or dispersible in water as aids in cosmetic compositions, and the polyurethanes therein have a glass transition temperature of at least 15 °C, preferably in the range of from 30 to 100 °C, and acid numbers of from 12 to 150, K value of between 26 to 37. See column 2, lines 9-50; column 5, lines 38-45; column 8, Table. The polyurethanes are composed of at least one compound which contains two or more active hydrogens per molecule, at least one diol containing acid or salt groups, and at least one diisocyanate. For diols see Col. 3, line 53-Col. 4, line 24. The polyurethanes are taught as soluble/dispersible in water without the assistance of emulsifiers, resistant to humidity, and biodegradable. Aqueous microdispersion comprising 1-40 % by weight of the polyurethanes is also disclosed. See column 6, lines 1-7.

The Handbook of Cosmetic Science and Technology teaches emulsions as promoting cosmetic elegance and allows otherwise impractical combinations of ingredients, i.e. oil soluble and water soluble materials, to be used in the same product. Emulsification is taught as offering great formulation flexibility, enabling modification of such parameters as feel, viscosity and appearance, to be made relatively easily. In

addition, emulsions facilitate the "dosing" of active ingredients onto the skin in an aesthetically pleasing and consistent manner. Emulsions are additionally very cost effective and offer a viable means of producing a commercially successful product. See page 95. The Handbook additionally teaches that the rate of phase separation can be reduced by reducing the dispersed phase particle size. Table 4 on page 112 of the Handbook teaches microemulsions as transparent. See pages 95, 112, 115, and 117.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to teach the polyurethane of K value of from 25 to 100, of Kim et al., as the polyurethane of Kantner et al., a) because both Kantner et al., and Kim et al. are directed toward water soluble/dispersible polyurethanes for use in cosmetics, and b) because of the expectation of achieving a sunscreen product that is resistant to humidity or water, thereby providing protection in a humid climate, and biodegradable.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to employ the polyurethane with a glass transition temperature of at least 25 °C, and the particular acid number taught by Kim et al. because 1) both Kantner et al., and Kim et al. are directed toward water soluble/dispersible polyurethanes for use in cosmetics, and 2) Kim et al teach that the polyurethanes therein resist humidity. One of ordinary skill in the art would have been motivated to employ polyurethane with a glass transition temperature of at least 25 °C with reasonable expectation of achieving a sunscreen product with similar benefits such as water resistance i.e resistant to humidity or water, thereby providing protection in a humid climate.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the teachings of Handbook of Cosmetic Science and Technology to teach the sunscreen composition of Kantner et al. in the form of an oil-in-water microemulsions because of the expectation of achieving a sunscreen formulation that allows a combination of oil soluble and water soluble active materials and promotes cosmetic elegance.

It is respectfully pointed out that McGraw Hill Encyclopedia of Science and Technology defines a microemulsion as typically clear because the dispersed droplets are less than 100 nanometers in diameter.

Claims 77, 79-86, 94-98, 105-109 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kantner et al., in view of Kim et al., and the Handbook of Cosmetic Science and Technology as applied to claims 64-75, 78, 87-92, 99-104 above, and further in view of Koch et al (6,258,963, PTO-892 of record).

Kantner et al., Kim et al., and the Handbook of Cosmetic Science and Technology, are applied as discussed above.

The references lack the particular sunscreen agents.

Koch et al. teach cosmetic compositions comprising UV absorbers. Aminobenzoic acid derivatives, salicylate derivatives, cinnamate derivatives, phenylene-bis-benzimidazyl-tetrasulphonic acid disodium salt, 2,2'-methylene-bis-(6-(2H- benzotriazol-2-yl)-4-(1,1,3,3-tetramethylbutyl)-phenol), 2,4-bis-((4-(2-ethyl-hexyloxy)-2-hydroxyl-



phenyl)-6-(4-methoxyphenyl)-(1,3,5)-triazine and others are taught as traditional and interchangeable UV absorbers. See col. 3, line 39-col.4, line 59.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to add 2,4-bis-((4-(2-ethyl-hexyloxy-2-hydroxyl-phenyl)-6-(4-methoxyphenyl)-(1,3,5)-triazine or 2,2'-methylene-bis-(6-(2H-benzotriazol-2-yl)-4-(1,1,3,3-tetramethylbutyl)-phenol) of Koch et al., to the composition of Kantner et al because a) Kantner et al teach that sunscreen actives which include triazine compounds, are present in the compositions therein, and Koch teaches that UV absorbers 2,4-bis-((4-(2-ethyl-hexyloxy-2-hydroxyl-phenyl)-6-(4-methoxyphenyl)-(1,3,5)-triazine or 2,2'-methylene-bis-(6-(2H-benzotriazol-2-yl)-4-(1,1,3,3-tetramethylbutyl)-phenol) are well known to be employed in cosmetic composition. Accordingly, one of ordinary skill in the art would have been motivated to employ the particular UV absorbers taught by Koch et al. with reasonable expectation of obtained a oil-in-water waterproof sunscreen composition.

Claims 76, 93 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kantner et al., in view of Kim et al., and the Handbook of Cosmetic Science and Technology as applied to claims 64-75, 78, 87-92, 99-104 above, and further in view of Gers-Barlag et al. (5,725,844, PTO-892 of record).

Kantner et al., Kim et al. and the Handbook of Cosmetic Science and Technology are applied as discussed above. The reference lacks hydrodispersions.

Gers-Barlag et al. teach sunscreen formulations. O/W emulsions and hydrodispersions are taught as interchangeable cosmetic formulations for sunscreens. Hydrodispersions are taught as preferable forms because they do not impart irritation to the skin of a user as a result of surfactants, as hydrodispersions do not contain surfactants. See Col. 2, line 15-Co1.3, line 32.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to teach the oil-in-water emulsions of the combined references in the form of hydrodispersions because Gers-Barlag et al. teach these formulations as interchangeable and because of the expectation of achieving a product that is less irritating to the skin of the user.

*(10) Response to Arguments*

*Claim Rejections - 35 USC § 103*

1. The rejection of claims 64-75, 78, 87-92, 99-104 under 35 U.S.C. 103(a) as being unpatentable over Kantner et al. (US 6,433,073), in view of Kim et al. (6,372,876), and further in view of the Handbook of Cosmetic Science and Technology should be affirmed.

Appellant argues that the polyurethanes described in Kantner and Kim have conflicting properties "while the polyurethanes of KANTNER, when used in cosmetic compositions, must be sufficiently hydrophobic so that they are not washed off when the skin or the hair comes into contact with water (otherwise these polyurethanes would not be able to provide water resistance or substantivity to skin, nails or hair), the polyurethanes of KIM must be "sufficiently hydrophilic to be washed out of the hair". See page 10 of Brief.

In response, it is pointed out that Kantner and Kim teach that the compositions containing polyurethanes therein are employed for hair care applications. Kantner teaches that the compositions containing polyurethanes have water resistance, and the polyurethanes therein improve the humidity resistance when used with other hair styling agents. Kim also teaches that the polyurethanes employed therein, on the one hand, be sufficiently hydrophilic to be washed out of the hair but, on the other hand, be hydrophobic i.e. repel water so that hair treated with the polymers retains its shape and not become sticky when humidity is high. See Kantner et al., column 5, lines 28-31, lines 40-42; Kim et al., column 8, bottom TABLE. Accordingly, both Kantner and Kim teach that the polyurethanes therein have sufficient humidity resistance i.e. have similar properties. It would have been obvious to one of ordinary skill in the art at the time the invention was made to employ the polyurethane of Kim et al., with the particular K value as the polyurethane of Kantner et al., because a) both Kantner et al., and Kim et al. are directed toward water soluble/dispersible polyurethanes for use in cosmetics applications, and b) because of the expectation of achieving a polyurethane that is soluble/dispersible in water without the assistance of emulsifiers, and because of reasonable expectation of achieving a hair care product with similar benefits such as water resistance, resistant to humidity, thereby providing protection in a humid climate, and biodegradable.

Appellant argues that "according to KIM the polyurethanes disclosed therein must not make the hair sticky even when the humidity is high (see, e.g., col. 1, lines 50-54). In contrast, the polyurethanes of KANTNER must show a certain degree of stickiness as evidenced, e.g., by the fact that they are suitable for use in cold seal adhesive compositions (see also the peel values set forth in Tables V and IX for the

polyurethanes of Examples 16 and 36 which are used in all of the Cosmetic Examples of KANTNER). This stickiness would appear to explain that KANTNER mentions that the polyurethanes described therein can also improve the humidity resistance of hair styling agents (which appear to include hair setting compositions such as those disclosed in KIM), but "when used at low levels in combination with other hair styling resins". See page 11 of Brief.

In response, it is pointed out that Kantner and Kim teach that the compositions containing polyurethanes therein are employed for hair care applications. Kantner teaches that the polyurethanes therein can be employed for applications such as cold seal adhesives, cosmetic applications which include hair care applications. Kantner teaches that the compositions containing polyurethanes have water resistance, and Appellant admits that the polyurethanes therein improve the humidity resistance when used with other hair styling agents when used at low levels. Accordingly, one of ordinary skill in the art would have been motivated to employ the polyurethanes taught by Kim et al., with the particular K value as the polyurethane of Kantner et al., with reasonable expectation of success of obtaining hair setting compositions with humidity resistance, since Kim et al. teach that the polyurethanes therein provide humidity resistance.

Appellant argues that "In this regard, Appellants submit that humidity resistance and water resistance are entirely different properties. Particularly, as indicated in col. 1, lines 50-54 of KIM, humidity resistance in the context of hair styling means that hair retains its shape and does not become sticky even when the humidity is high. Water resistance in the context of cosmetics on the other hand means that the polyurethane is not immediately dissolved and/or rinsed off when it comes into contact with water". See page 12 of Brief.

In response, it is pointed out that both Kantner and Kim teach that the compositions containing polyurethanes therein provide humidity resistance to hair care compositions when used with other hair styling agents.

Appellant argues that "a polyurethane which is soluble in water (i.e., lacks water resistance) can nevertheless impart a high degree of humidity resistance is illustrated by polyurethane No. 5 in the table at the bottom of col. 8 of KIM". See page 13 of Brief.

In response, it is pointed out that contrary to applicant's remarks that "a polyurethane which is soluble in water (i.e., lacks water resistance)", Kim et al. does not teach that the polyurethanes therein lack water resistance. Kim et al. teach that the polyurethanes therein have humidity resistance, and are employed for hair styling applications. Kim et al. also teaches that the polymers for hair styling application must be hydrophobic i.e. repel water so that the hair treated with the polymers retains its shape and does not become sticky when the humidity is high. See Kim et al, lines 52-53.

Both Kantner et al. and Kim et al. teach that the polyurethanes therein have humidity resistant property, and thus the polyurethanes of Kantner are interchangeable with the polyurethanes of Kim, and there is clear motivation to employ polyurethanes of Kim as discussed above.

2. The rejection of claims 77, 79-86, 94-98, 105-109 under 35 U.S.C. 103(a) as being unpatentable over Kantner et al., in view of Kim et al., and the Handbook of Cosmetic Science and Technology as applied to claims 64-75, 78, 87-92, 99-104 above, and further in view of Koch et al (6,258,963) should be affirmed.

It is pointed out that the remarks presented above apply equally to dependent claims 77, 79-86, 94-98, 105-109, as discussed above.

3. The rejection of claims 76, 93 under 35 U.S.C. 103(a) as being unpatentable over Kantner et al., in view of Kim et al., and the Handbook of Cosmetic Science and Technology as applied to claims 64-75, 78, 87-92, 99-104 above, and further in view of Gers-Barlag et al. (5,725,844) should be affirmed.

It is pointed out that the remarks presented above apply equally to dependent claims 76, 93, as discussed above.

For the above stated reasons, said claims are properly rejected under 35 U.S.C. 103(a). Therefore, it is believed that the rejections should be sustained.

(11) *Related Proceedings Appendix*  
None

Respectfully submitted,

/SREENI PADMANABHAN/

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